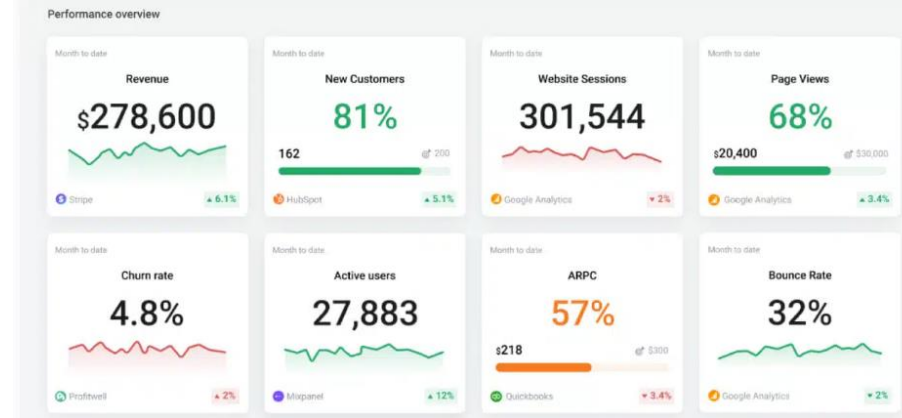


Mõõtmine, mõõdikud ja ROM (Return on Measurement)



Andres Kukke

Andmekirjaoskuse koolitaja ning
ärianalüütika (BI) ja masinõppe (AI) consultant

andres.kukke@infovara.ee

Minust: Andres Kukke



- Floorin AS digitaliseerimise juht, Infovara OÜ juhatuse liige (alates 2022)
- Statistikaamet (peadirektori asetäitja IT ja andmeteaduse alal) 2017- 2021
- Infovara OÜ (juhatuse liige, tegevjuht, ärianalüütika valdkonna juht) Juhtinud üle 65 erineva ärianalüütika projekti Eestis, Lätis, Leedus, Soomes 2002-2017
- Resta AS (ärianalüütika konsultant) 1999-2002
- Kinex AS (majandustarkvara konsultant)1993-1999

- EBS ärianalüütika välisõppejõud erinevates programmides (alates 2014)
- Äripäeva Akadeemia koolitusprogrammide “Möödikud, Andmekirjaoskus, Ärianalüütika ja AI” lektor

Infovara OÜ on ärianalüütikale
spetsialiseerinud konsultatsiooniettevõtte.

Aitame oma klientidel tõsta nende **analüütilist
võimekust** ja seeläbi saavutada **paremaid
tulemusi**



SORAINEN
ESTONIA LATVIA LITHUANIA BELARUS

 **HARIDUS- JA TEADUSMINISTEERIUM**

TELE2

 **SA TALLINNA LASTEHAIGLA**

COOP

GAS

 **LASITA MAJA**

 **MAKSU- JA TOLLIAMET**

 **RAHANDUS-MINISTEERIUM**
MINISTRY OF FINANCE of the REPUBLIC of ESTONIA

 **HARJU ELEKTER**

 **riigikontroll**
National Audit Office of Estonia

 **Telia**

 **Balbiino**

 **Let's do it!**

myfitness
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Kalev
KIUSATUS AASTAST 1806

PRIKE

 **VKG**
VIRU KEEMIA GRUPP

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 **BIOMARKET**

 **Apteek**

 **estover**
PIIMATOOSTUS

estravel

Baltic Agro

 **rademar**

iizi

 **RAGNA SELLS**
Roheline ring

Dunker

ra
Rahva Raamat

TERE

coop | Pank

PZU

 **Castovanni**

SLO

AASTAT 20 + ANALÜÜTILIST KOGEMUST 20 + KLIENTI

astlanda
EHITUS

 **ALFONS HÄKANS**

 **AMSERV**

WEG. ESTI
MEMBER OF THE WÜRTH GROUP

 **BLRT**
GRUPP

 **SPORTLAND**

FELIX

KREDEX

ABB

 **STOKKER**

Regionaalhaigla

floorin
põrandad

 **ALEXELA**
LOGISTICS

 **tervis**
medical spa

VILJANDI
windows - doors

 **PUUMARKET**
ESTI EHIJUSPARTNER AASTAST 1991

R kiosk

RESERVED

 **SCANIA**

 **Balti Logistika**

KGK
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 **cortex eesti. a/s**

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 **KUNDA NORDIC**
HEIDELBERGCEMENT Group

 **Pernod Ricard Estonia**

sebe

STORAENSO

 **KAITSELIIT**

tammer

Dimedium

Äripäev

INTRAC

bauroc

SIROWA
ARCO VARA

 **KONESKO**

Andmete 3D maailm

ÕIGEL AJAL

ÕIGE SISUGA

(WHAT, SO WHAT, NOW WHAT)

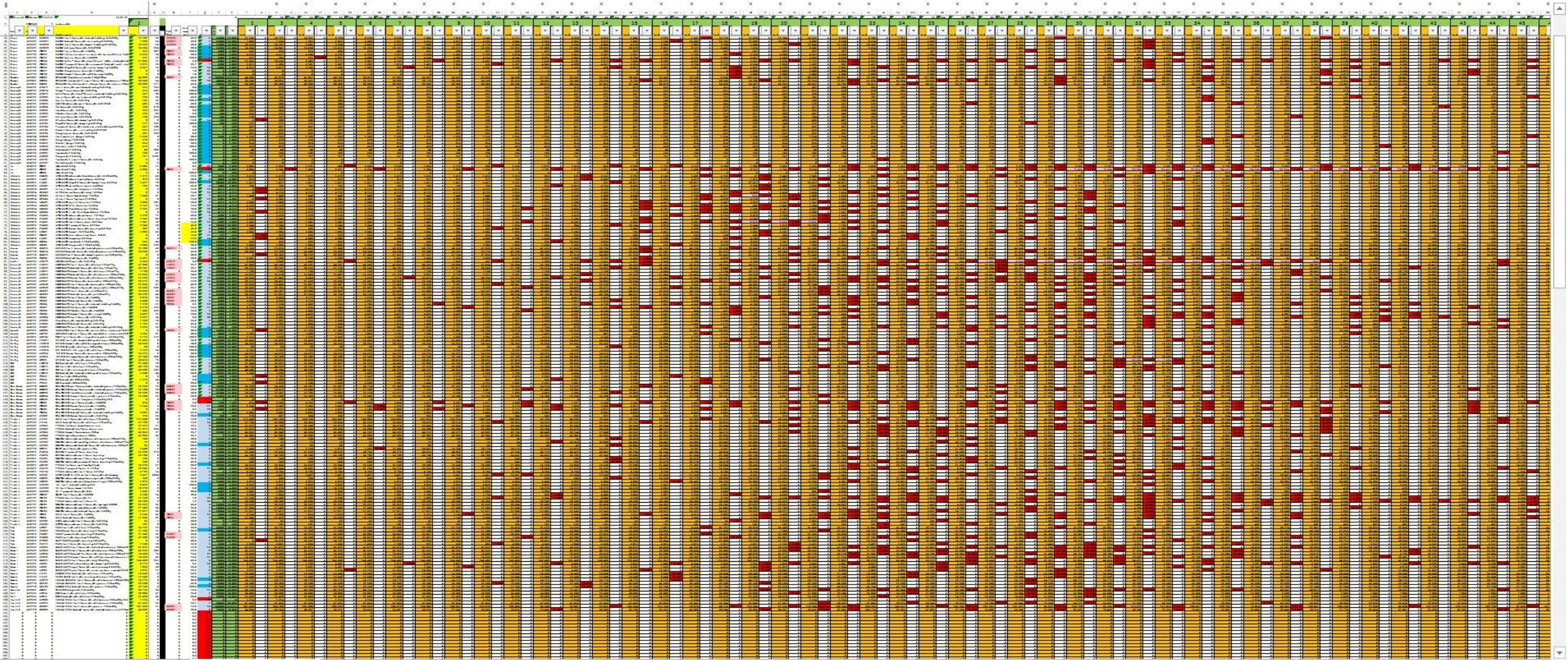
ÕIGES FORMAADIS

Väide: Meie organisatsioonis on hulga andmeid, millest oskame otsustamiseks vajaliku teavet õige sisuga, õiges formaadis ja õigel ajal välja selekteerida ning kasutada

- 1-Ei ole nõus
- 2-Pigem pole nõus
- 3-Nii ja naa
- 4-Pigem nõus
- 5-Olen täiesti päri

MEIE OKT KUU ANDMED





Kas SMARTER teadmine on piisav?

S

Specific

Being too vague with your targets puts you at a disadvantage. You want to be focused and specific.

M

Measurable

What does achieving your goal actually look like? You want to be able to measure progress so you can evaluate how you're doing.

A

Achievable

Can you actually put a plan in place to achieve your goals? Any targets you set, you want to have the tools available to put them into action.

R

Relevant

In that same vein, your targets should all be within your reach. We're not saying don't have ambitious goals, but you want to set yourself up for success.

T

Time-bound

An end-date means you can keep track of your progress, prioritise, and measure your success.

E

Evaluated

KPIs are a way for teams to communicate with the wider business. They should be easy to understand and contextualise.

R

Readjust

Do your KPIs fit your business? If not, you may be measuring the wrong things.

Edukuseks on vaja tegeleda nelja teemaga!

ANDMEHALDUS (DATA GOVERNANCE/MANAGEMENT)

ANDMEANALÜÜTIKA (DATA ANALYTICS)

ANDMEKIRJAOSKUS (DATA LITERACY)

ANDMEKULTUUR (DATA CULTURE)

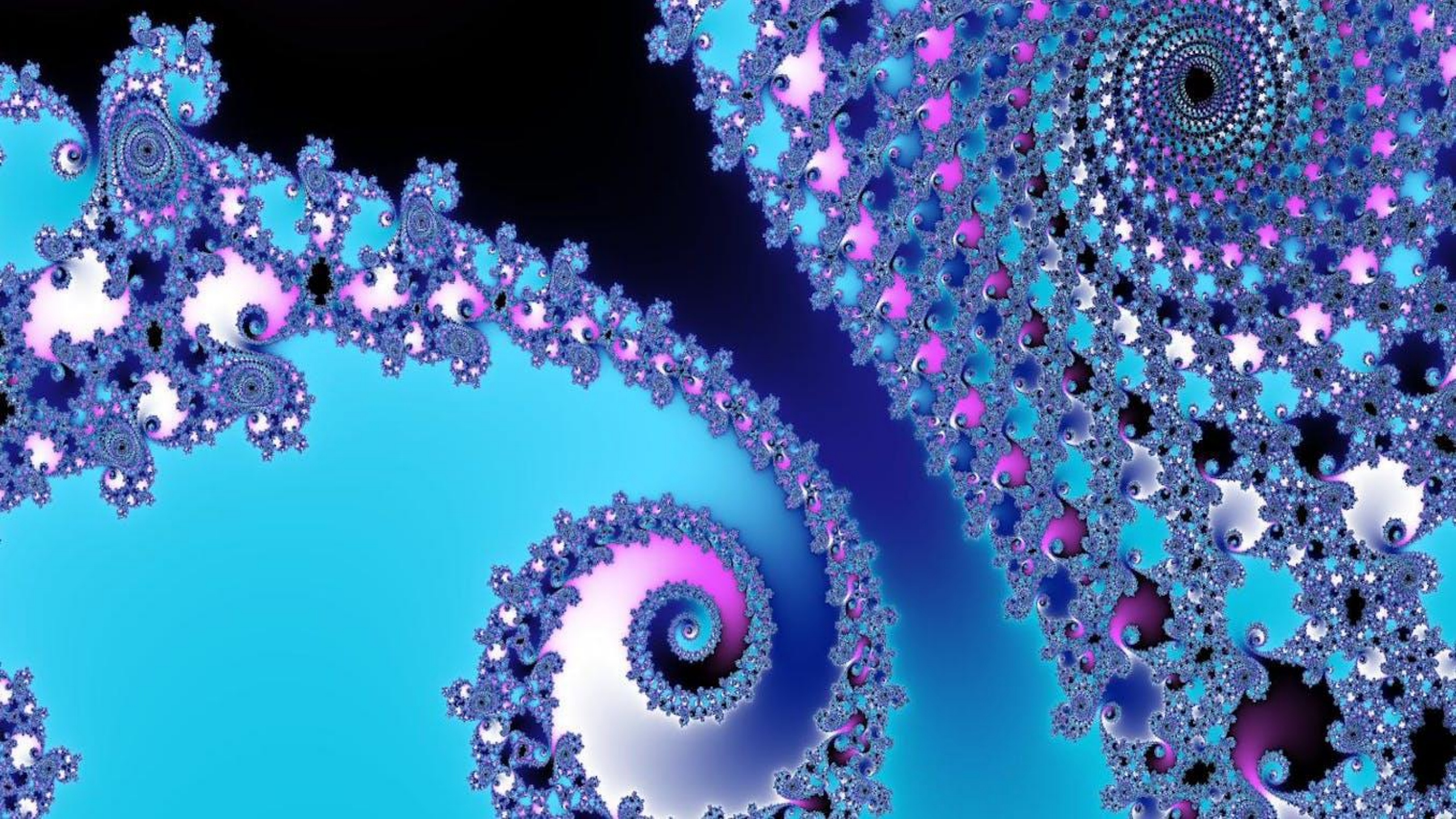
Edukuseks on vaja tegeleda nelja teemaga!

ANDMEHALDUS (DATA GOVERNANCE/MANAGEMENT)

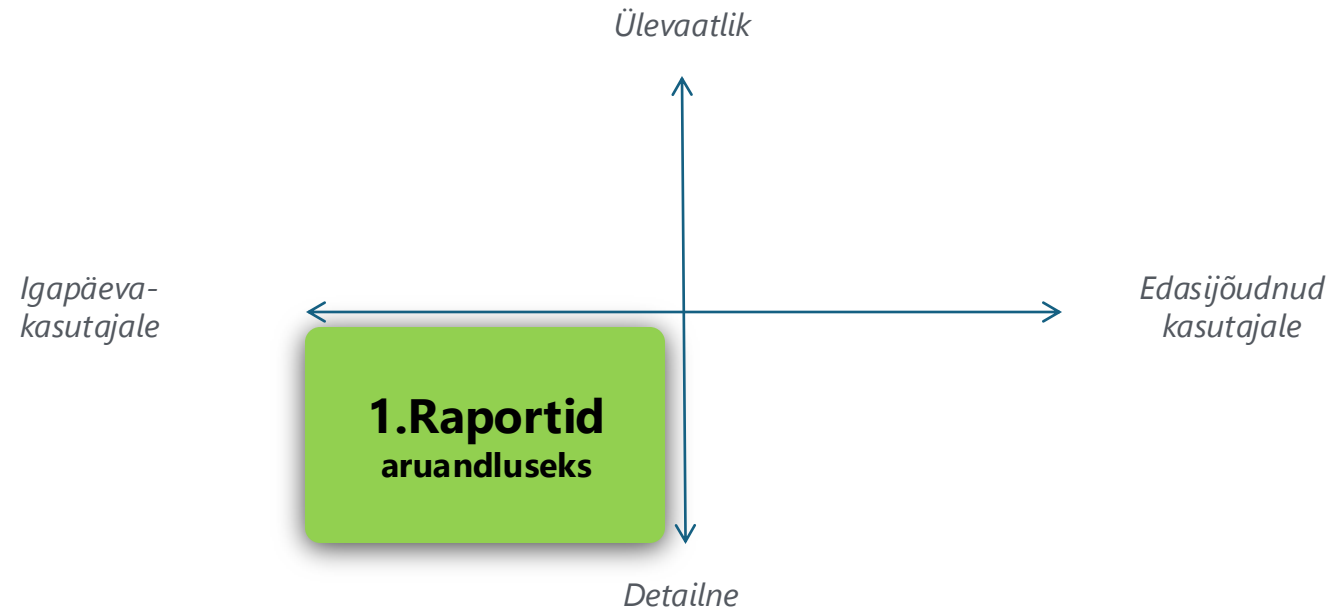
ANDMEANALÜÜTIKA (DATA ANALYTICS)

ANDMEKIRJAOSKUS (DATA LITERACY)

ANDMEKULTUUR (DATA CULTURE)

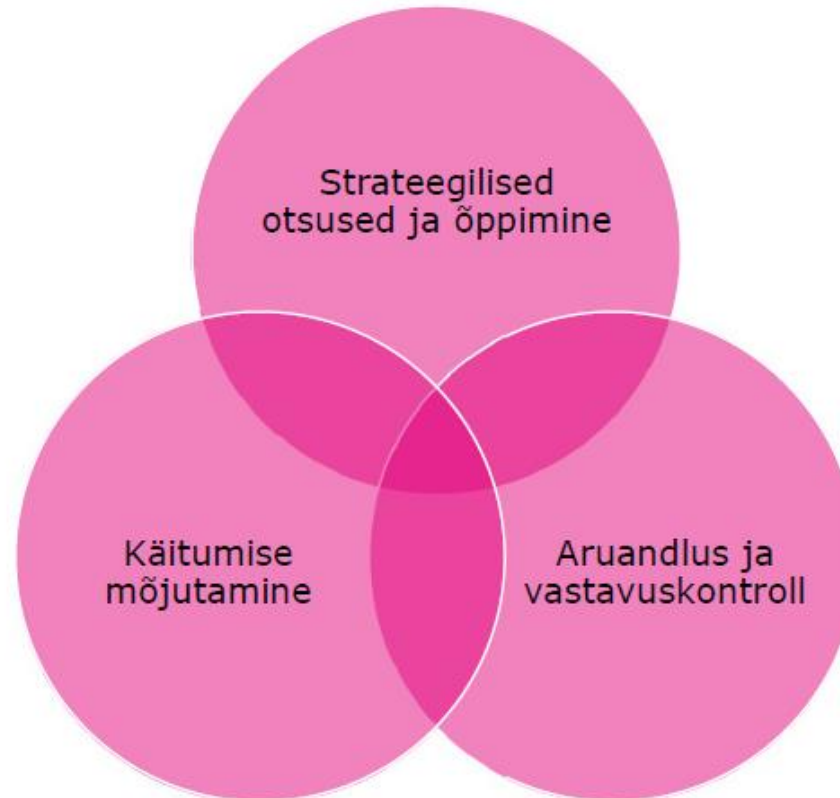


Mõõtmisüsteemi (ROM) I tase - andmepunktid





Miks meil KPI vaja on?



Mõõdikute funktsioonid organisatsioonis.
Strategic Performance Management Marr 2006

Kuidas aru saada, millised on õiged KPI?

Copyrighted Material

The KPI Compendium

20,000+
Key
Performance
Indicators
used in practice

Editorial coordination: Axel Brähler

THE KPI INSTITUTE

Copyrighted Material

smartKPIs.com
The smart choice in performance management

| | |
|--------|---|
| sK5869 | % Process efficiency ratio |
| sK5878 | # Time to notify |
| sK5879 | # Collection time |
| sK5882 | % Deficiencies improvement |
| sK6141 | # Deficiencies per manufacturing plant inspection |

| | |
|---------|--|
| sK6424 | # ISO certifications acquired |
| sK6843 | % Processes mapped |
| sK7060 | % Beverage quality index |
| sK13998 | # Audit action overdue |
| sK14086 | # Defects or repairs that require action not rectified the scheduled time frames |

Sales and Customer Service

Sales and Customer Service refer to the activities conducted to actually exchange the organization's goods and/or services for financial value and provide a series of additional services to customers pre-, during and post-sales.

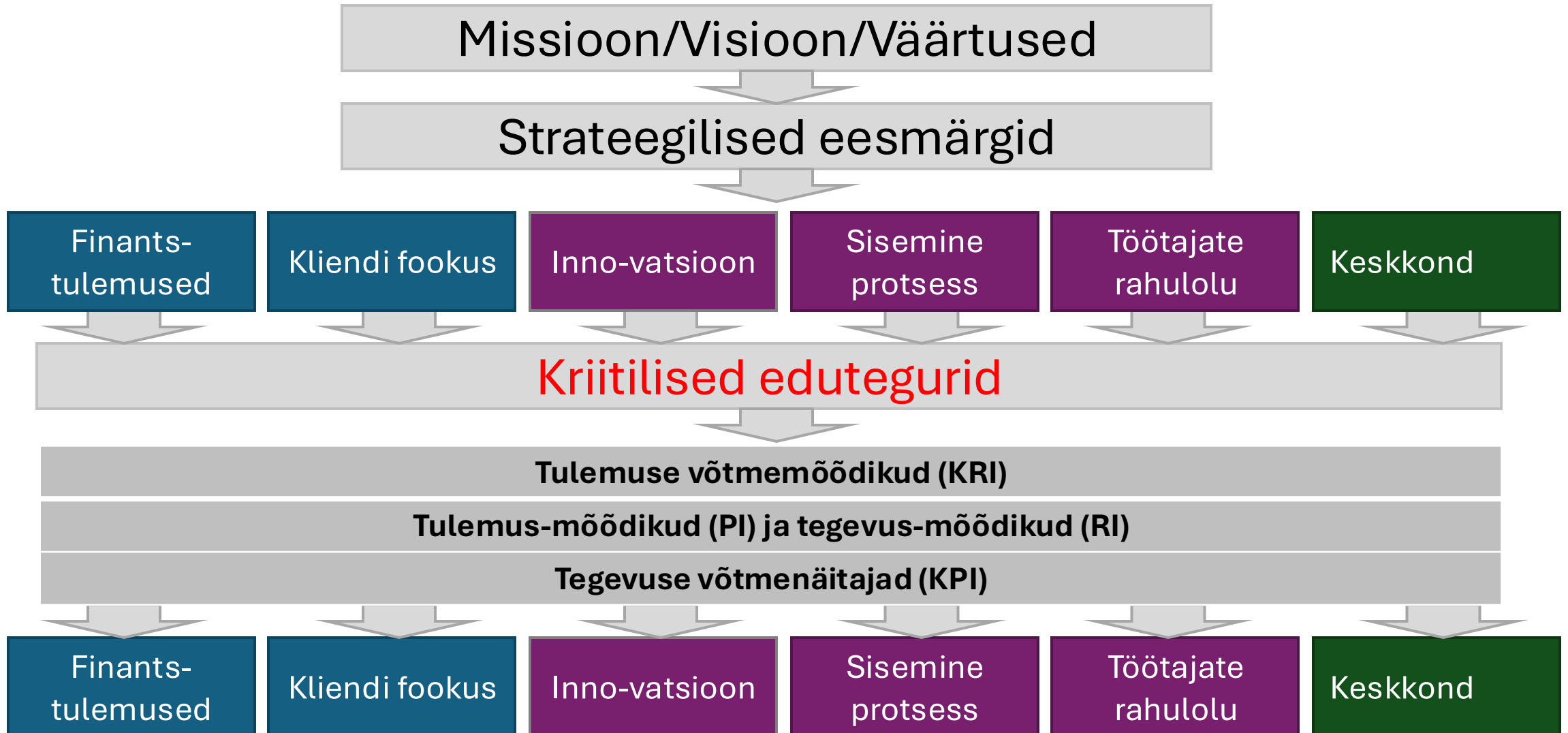
Customer Service

Customer Service stands for an organization's capability in offering specific services for their customers, at their required qualitative level to satisfy their needs and wants. KPIs refer to the time efficiency responsiveness as perceived by the customers, as well as the quality of the services and responses offered.

| sKPI # | Key Performance Indicator name |
|--------|--|
| sK4 | % Orders delivered with damaged products |
| sK10 | % On-time delivery |
| sK31 | # Service calls to travel time |
| sK32 | % Customer calls answered in the first minute |
| sK105 | # Completion to billings |
| sK165 | # Call handling time |
| sK166 | % Call completion rate |
| sK168 | % Call abandon rate |
| sK292 | % Unique received calls |
| sK380 | # Response time to business partner request |
| sK383 | % Reports submitted on-time |
| sK384 | % Timeliness of issues resolution |
| sK433 | # Time to rectify defects |
| sK598 | % Work orders closed within the specified time period |
| sK621 | % Customer complaints due to poor service or product quality |
| sK701 | # Pick-to-ship cycle time for customer orders |
| sK751 | # Complaints received |
| sK1001 | % Overdue service requests |
| sK1017 | % Call transfer rate |
| sK1079 | # Service requests per agent |
| sK1081 | # After call work time |
| sK1113 | # Speed of answer (SA) |
| sK1114 | % Calls answered within service level time |

| sKPI # | Key Performance Indicator name |
|--------|---|
| sK1360 | % Agent availability rate |
| sK1380 | % Repeat calls |
| sK2351 | # Actual delivery date versus promised date |
| sK2352 | # Time from inquiry to response |
| sK2353 | # Time to resolve complaints |
| sK2354 | # Defect goods on installation |
| sK2355 | % Order entry error rate |
| sK2356 | \$ Service expense per customer |
| sK2357 | % Calls on hold longer than X seconds |
| sK2358 | % Complaints not resolved in X hours |
| sK2359 | % Complaints not resolved on first call |
| sK2360 | # Credit request processing time |
| sK2362 | % Complete and on time delivery |
| sK2363 | # Service requests outstanding |
| sK2365 | % Sales invoices issued on time |
| sK2366 | % Resolution of queries the same day |
| sK2367 | # Orders processed |
| sK2370 | % Correspondence replied to on time |
| sK2371 | # Time taken from order to delivery |
| sK2372 | # Longest call hold |
| sK2373 | # Longest delay in queue |
| sK2374 | # Busy signals |
| sK2375 | # On-hold time |
| sK2377 | % Complaints resolved |
| sK2378 | # Talk time |
| sK2379 | % Customer satisfaction with service levels |
| sK2380 | % Right answers or advice the first time |
| sK2381 | # Support requests |
| sK2382 | % Consistency of advice |

Mis on KPI (KEI)/KRI allikas?



Näide: Kriitiline edutegur (CSF)

Viime uued teenused kiiresti klientideni

Võtme tulemusmõõdik:

Uute teenuseid kasutavate klientide arv/osakaal (viimase 12 kuu trend)

Tulemusmõõdik:

Uusi teenuseid kasutavate klientide NPS (42 või parem)

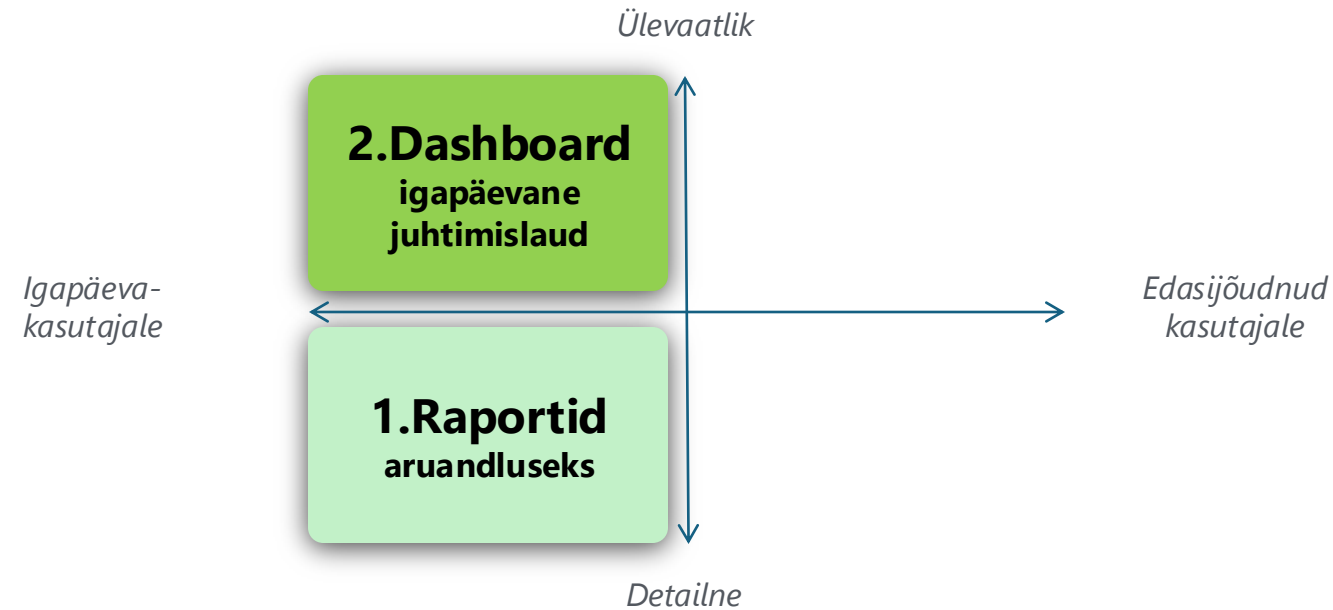
Tegevusmõõdik:

Võtmeklientide arv, kelle uue teenuse tellimuse tarne tähtajast on möödas rohkem kui 7 päeva/nädalat

Võtme tegevusmõõdik:

Ürituste arv viimasel kolmel kuul, kus tippjuhtkond õpib vahetult tundma klientide vajadusi erinevates rollides (nt.klienditeenindajana)

Mõõtmisüsteemi (ROM) II tase - andmejooned



Juhtimise töölaud (dashboards)

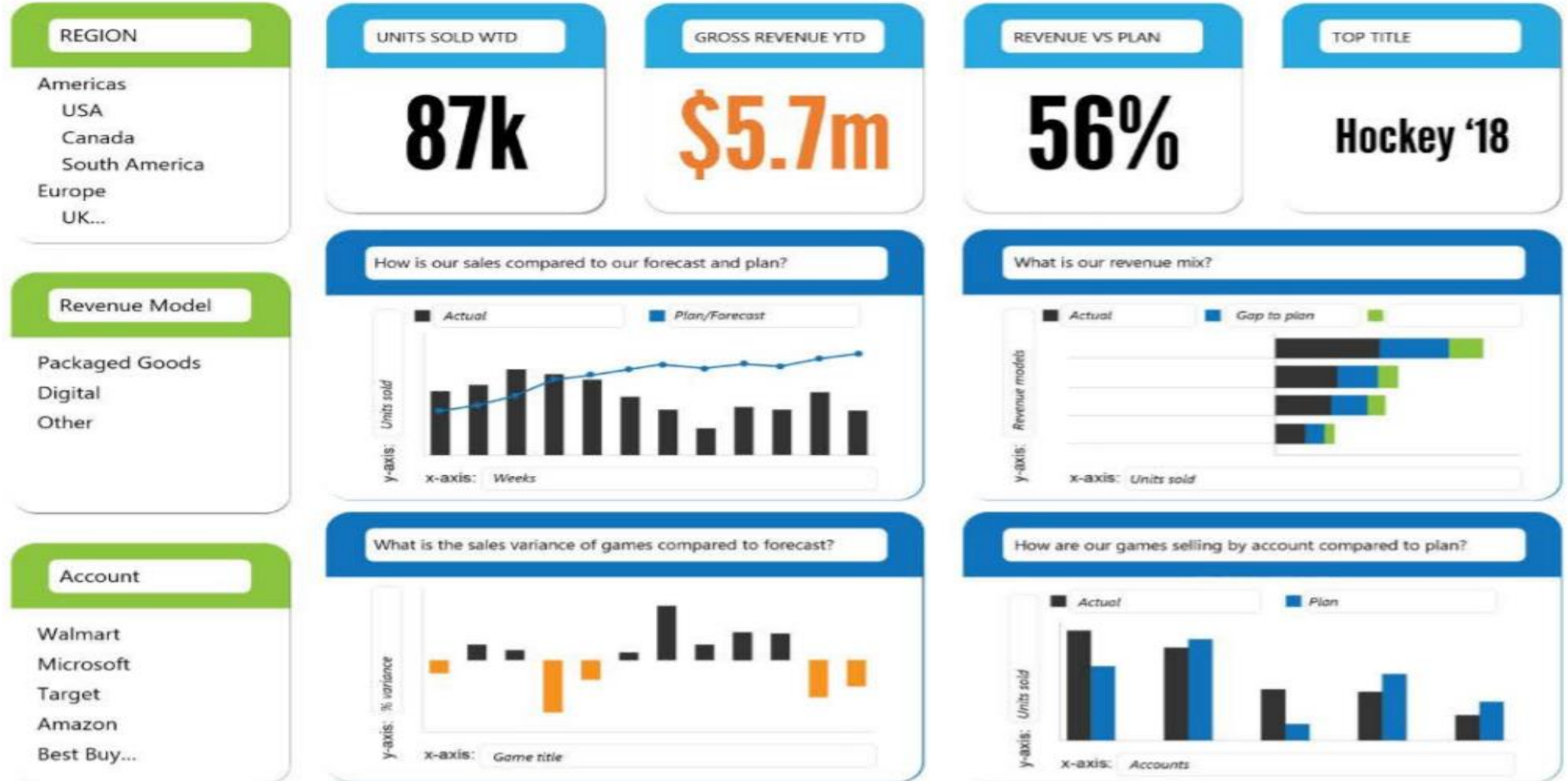


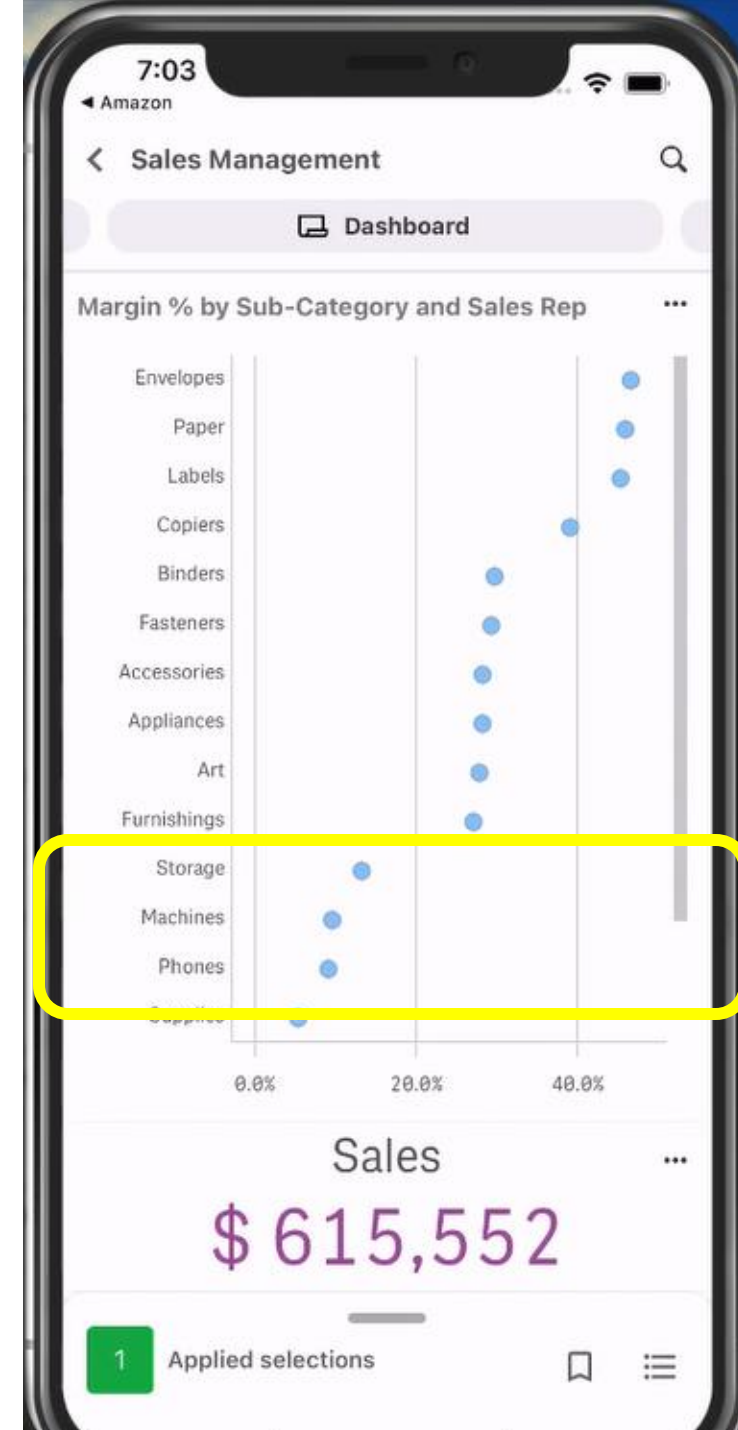
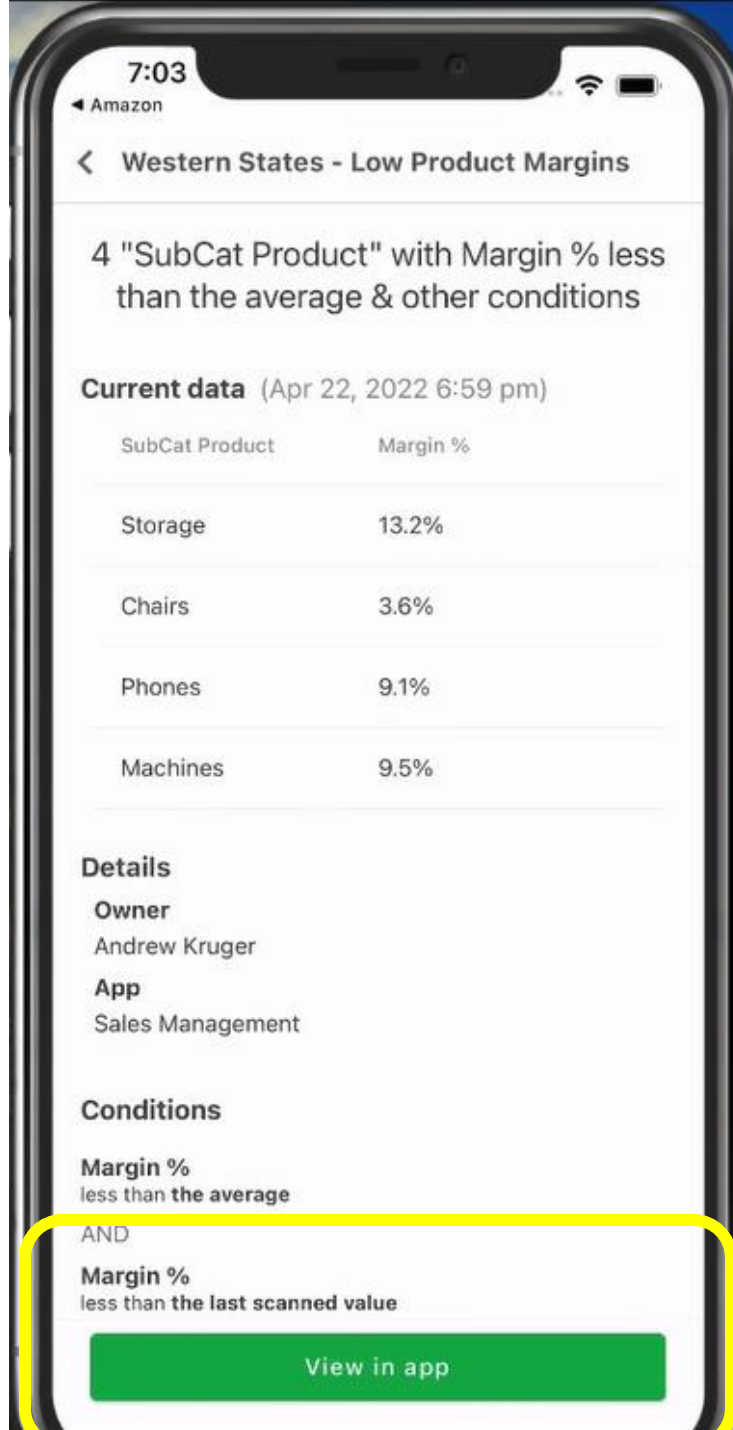
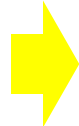
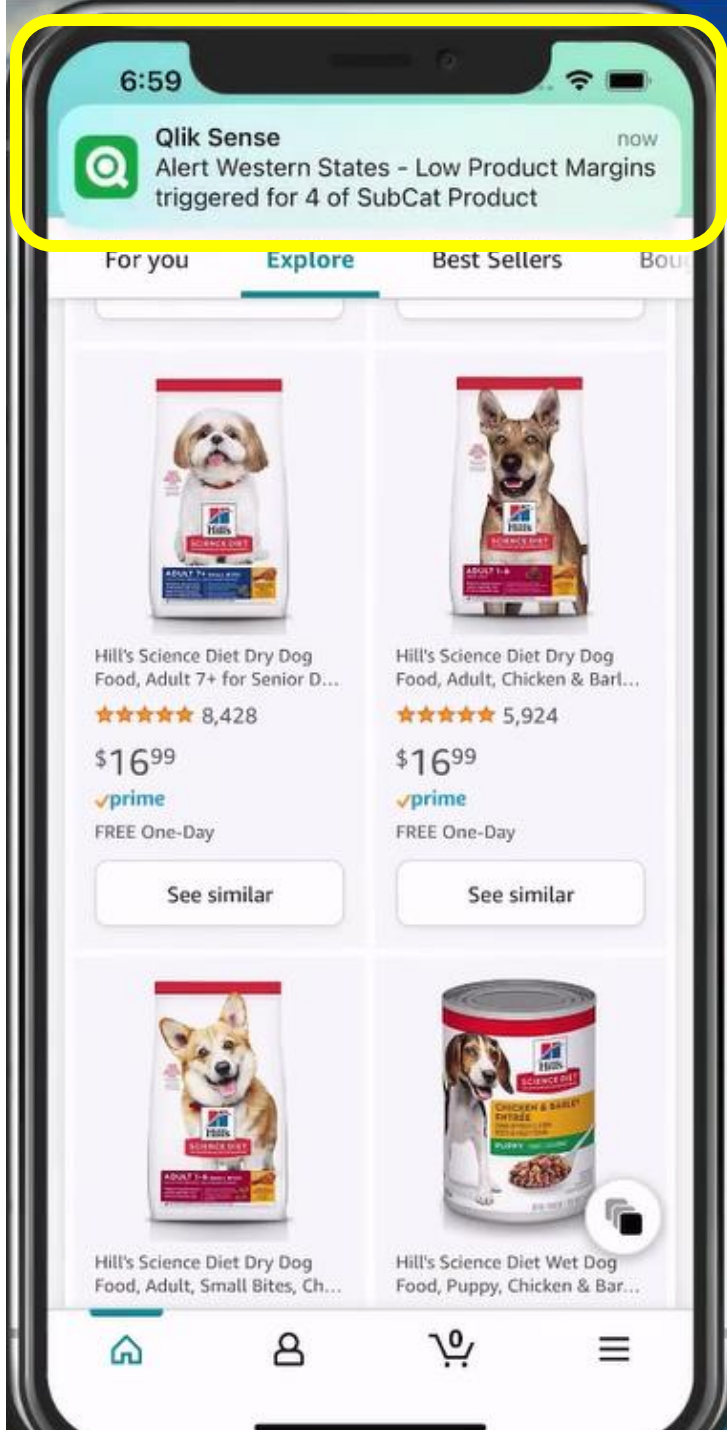
Maailma vanim mõõtmise artefakt ehk maailma vanim dashboard (35 tuh eKr)



Lebombo luu

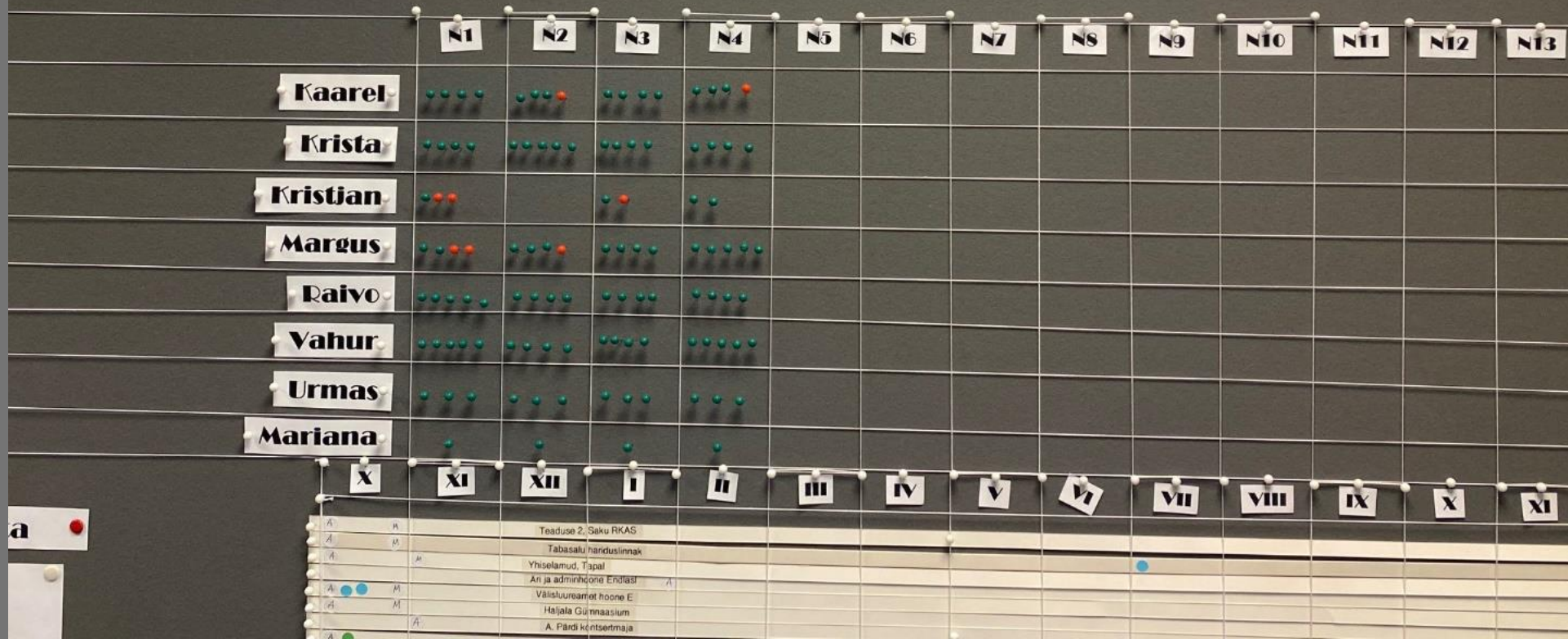
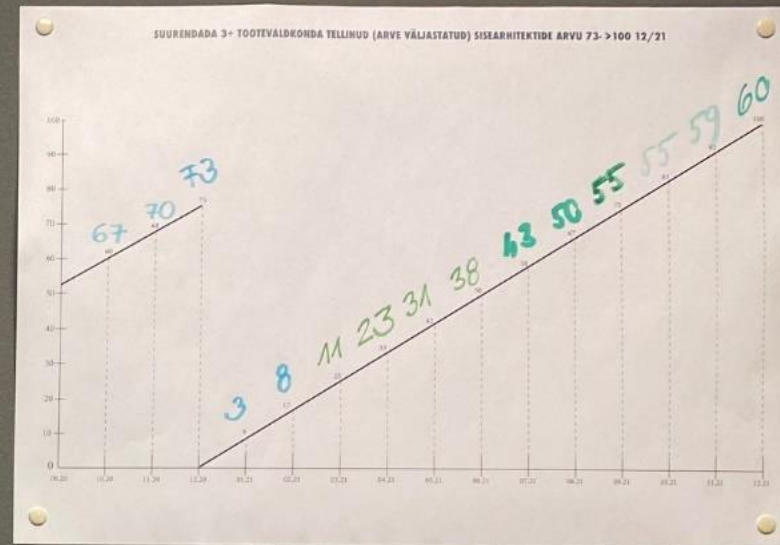
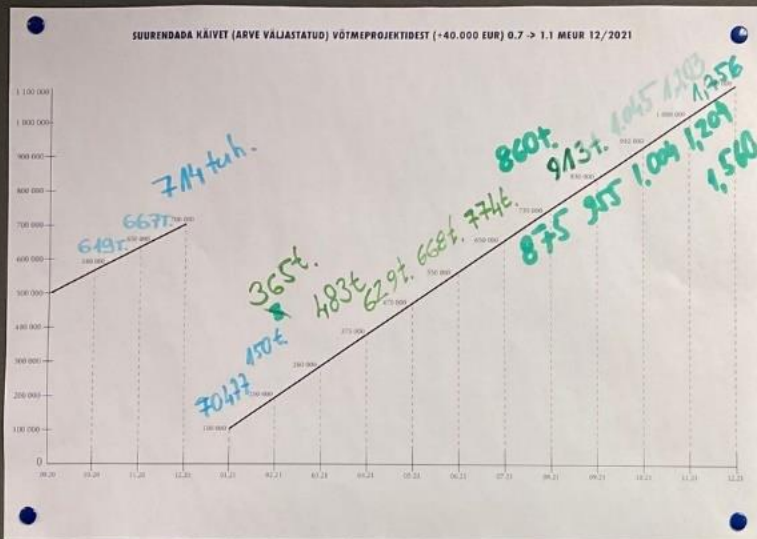
Näide töölaust



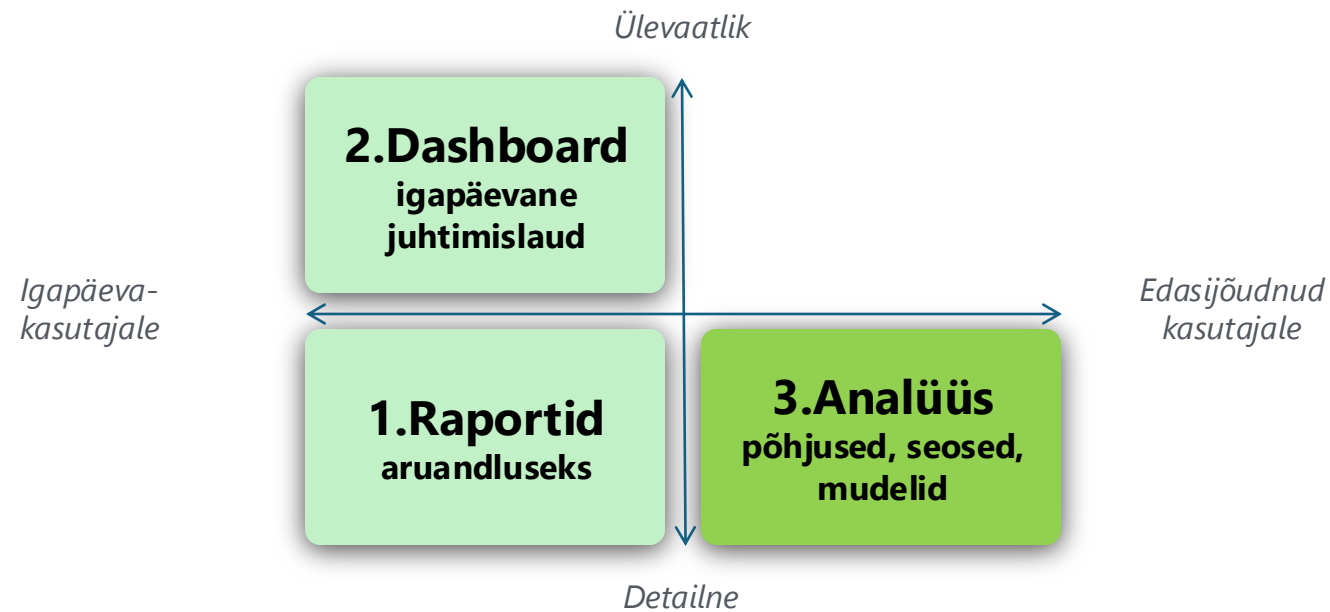




**INIMESED MÄNGIVAD TEISITI
KUI NAD ISE PUNKTE LOEVAD!**



Mõõtmisüsteemi (ROM) III tase - andmekurvid



Kuidas jagunevad keemilised elemendid?

KEEMILISTE ELEMENTIDE PERIOODILISUSTABEL

Atomnumber ehk prootonite arv → **1** ← Elemendi sümbol
 Aatommass (juures tähenähtav, vt legendit se stabilisuma teetööle aatommassiga) → **1.008** ← Elemendi nimetus

Radioaktiivsed elemendid

Rühmad 1–18 ja kõrvalrühmad IA, IIA jne

■ A-rühma metallid ■ Leelismuldmetallid ■ Poolmetallid
■ B-rühma metallid ■ Lantanoidid ■ Mittemetallid
■ Leelismetallid ■ Aktinoidid ■ Väärigaasid

| | | | | | | | | | | | | | | | | | |
|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | | | | | | | | | | | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 | 2 | | | | | | | | | | | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 2 | | | | | | | | | | | 3 | 4 | 5 | 6 | 7 | 8 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | | |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | | |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | |

Keemiliste elementide perioodilisustabel

Tootekood: K0076076

2,31 € / tk Püsikliendihind 2,19 €

E-POE SAADAVUS: 14 ^

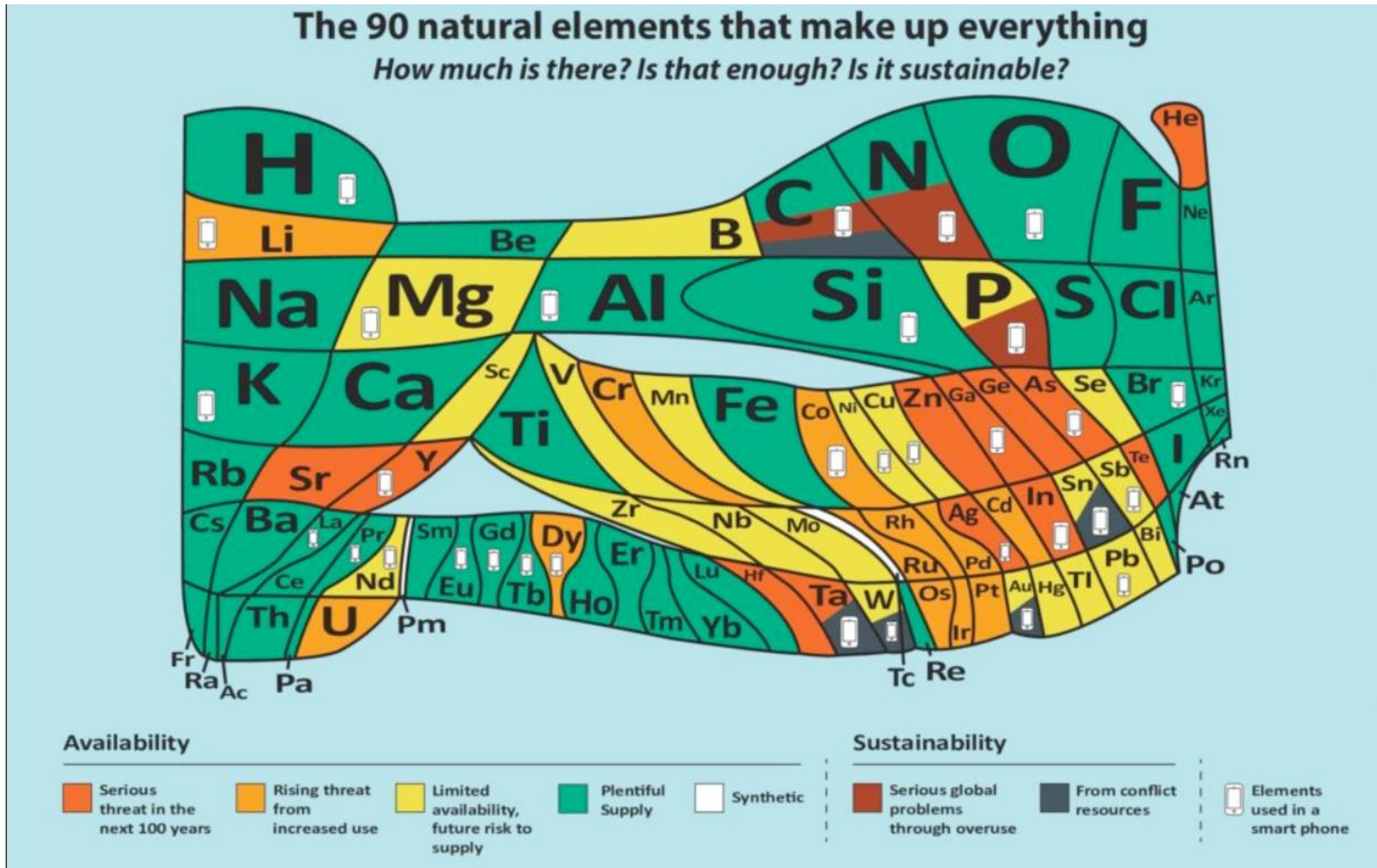
| LADU | LAOSEIS | TARNEAEG | HIND | KOGUS |
|-------|---------|----------|--------|------------------------------------|
| BMWEB | 14 tk | 1-3 tp | 2,31 € | - <input type="text" value="1"/> + |

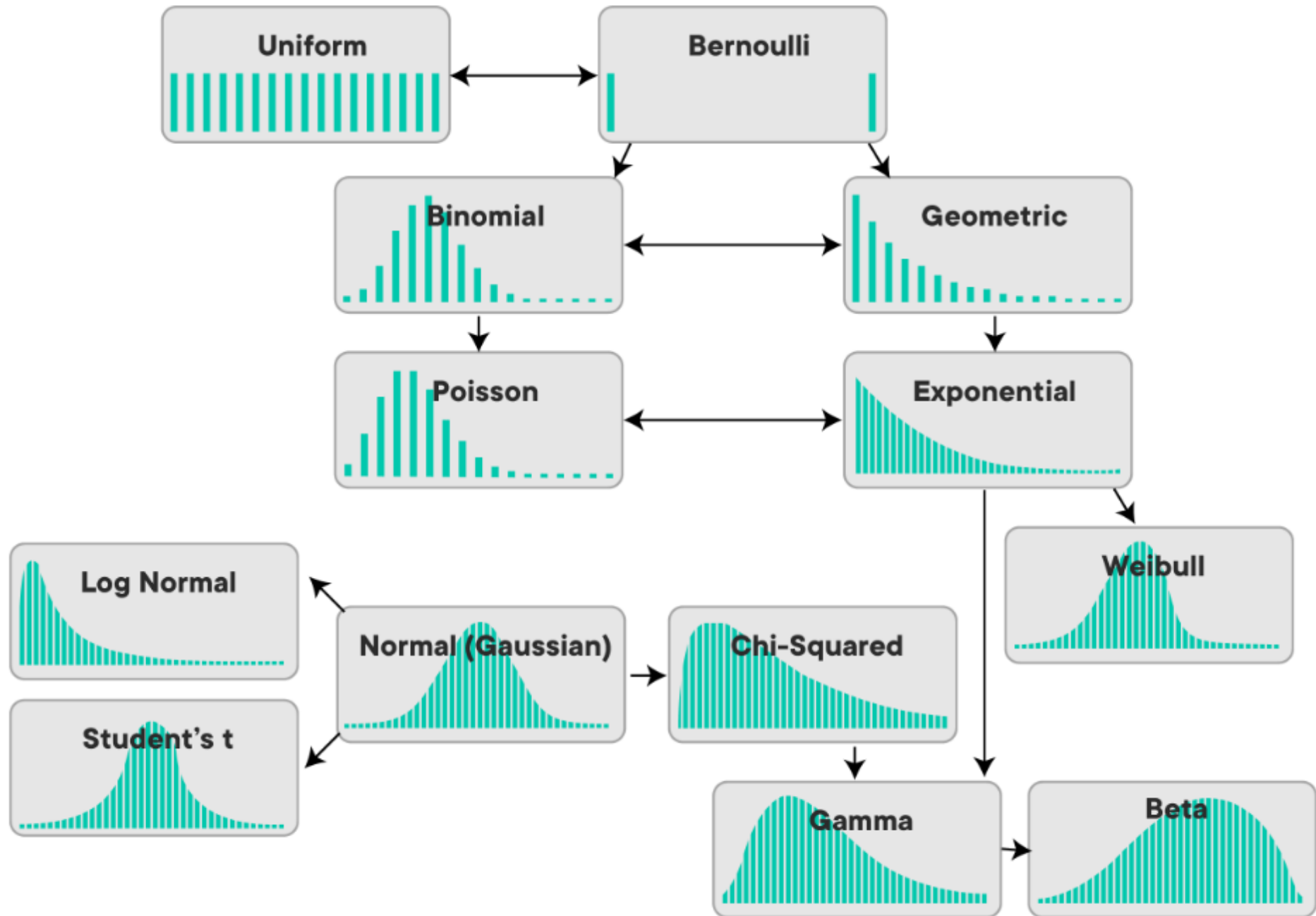
SAADAVUS KAUPLUSTES: 3 v

♡ Lisa soovinimekirja

LISA KORVI

Kuidas jagunevad keemilised elemendid?





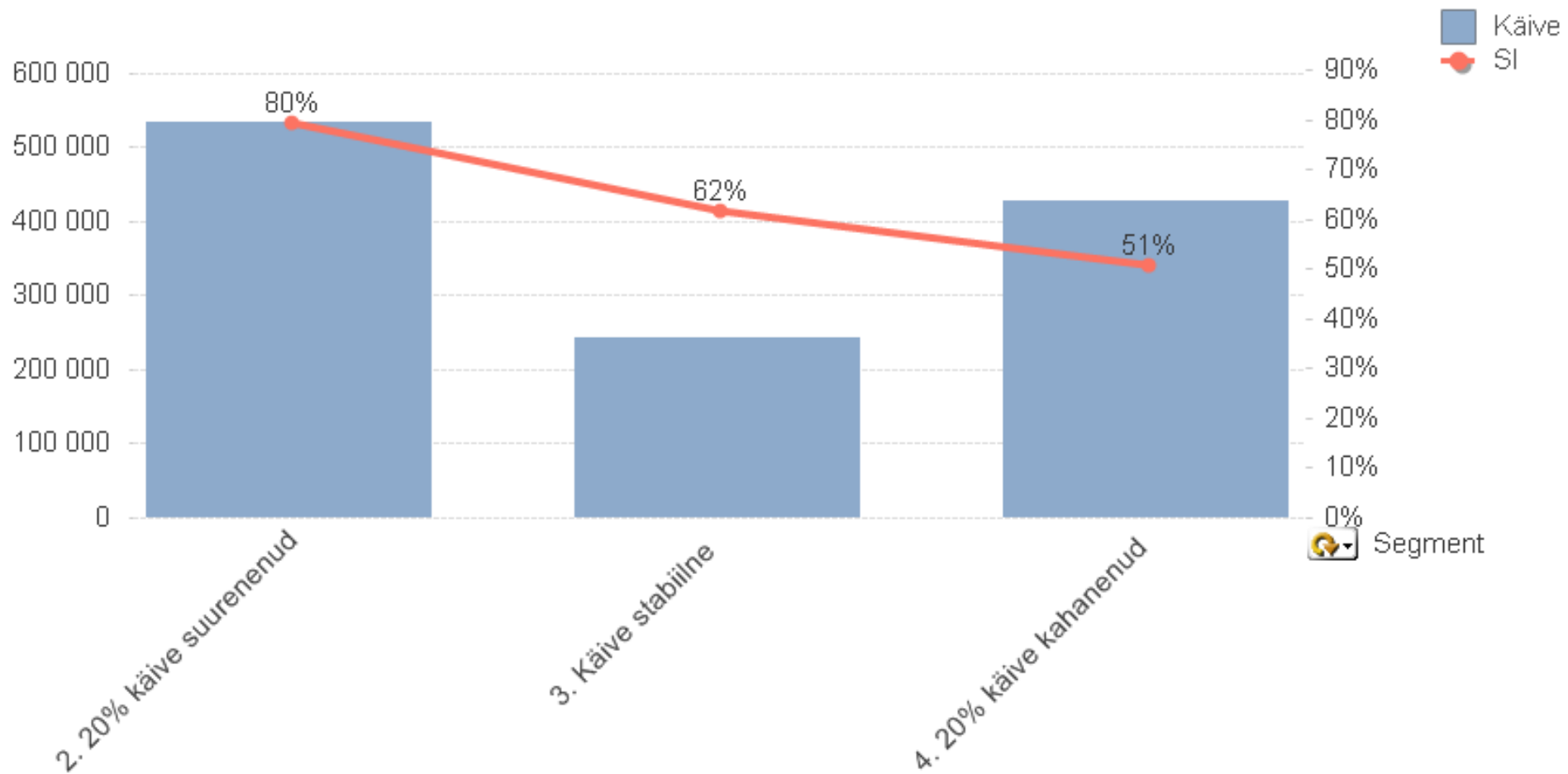
Klientide jaotus 10 gruppi

| Decile | # of customers | Profit | Cumulative | % of total... | Cumul... | Average profit |
|--------|----------------|-----------------------|---------------------|---------------|---------------|-----------------|
| 1 | 28 | \$5,280,219.69 | 5.280.219,69 | 78,9% | 78,9% | \$184.91 |
| 2 | 27 | \$757,052.76 | 6.037.272,45 | 11,3% | 90,3% | \$136.28 |
| 3 | 27 | \$290,420.69 | 6.327.693,14 | 4,3% | 94,6% | \$137.25 |
| 4 | 27 | \$152,735.58 | 6.480.428,72 | 2,3% | 96,9% | \$121.22 |
| 5 | 27 | \$86,402.19 | 6.566.830,91 | 1,3% | 98,2% | \$136.93 |
| 6 | 28 | \$55,479.35 | 6.622.310,26 | 0,8% | 99,0% | \$141.89 |
| 7 | 27 | \$32,231.65 | 6.654.541,91 | 0,5% | 99,5% | \$117.63 |
| 8 | 27 | \$19,810.73 | 6.674.352,64 | 0,3% | 99,8% | \$105.94 |
| 9 | 27 | \$11,216.70 | 6.685.569,34 | 0,2% | 100,0% | \$91.19 |
| 10 | 28 | \$3,126.55 | 6.688.695,89 | 0,0% | 100,0% | \$46.66 |
| | 273 | \$6,688,695.89 | 6.688.695,89 | 100,0% | 100,0% | \$170.81 |

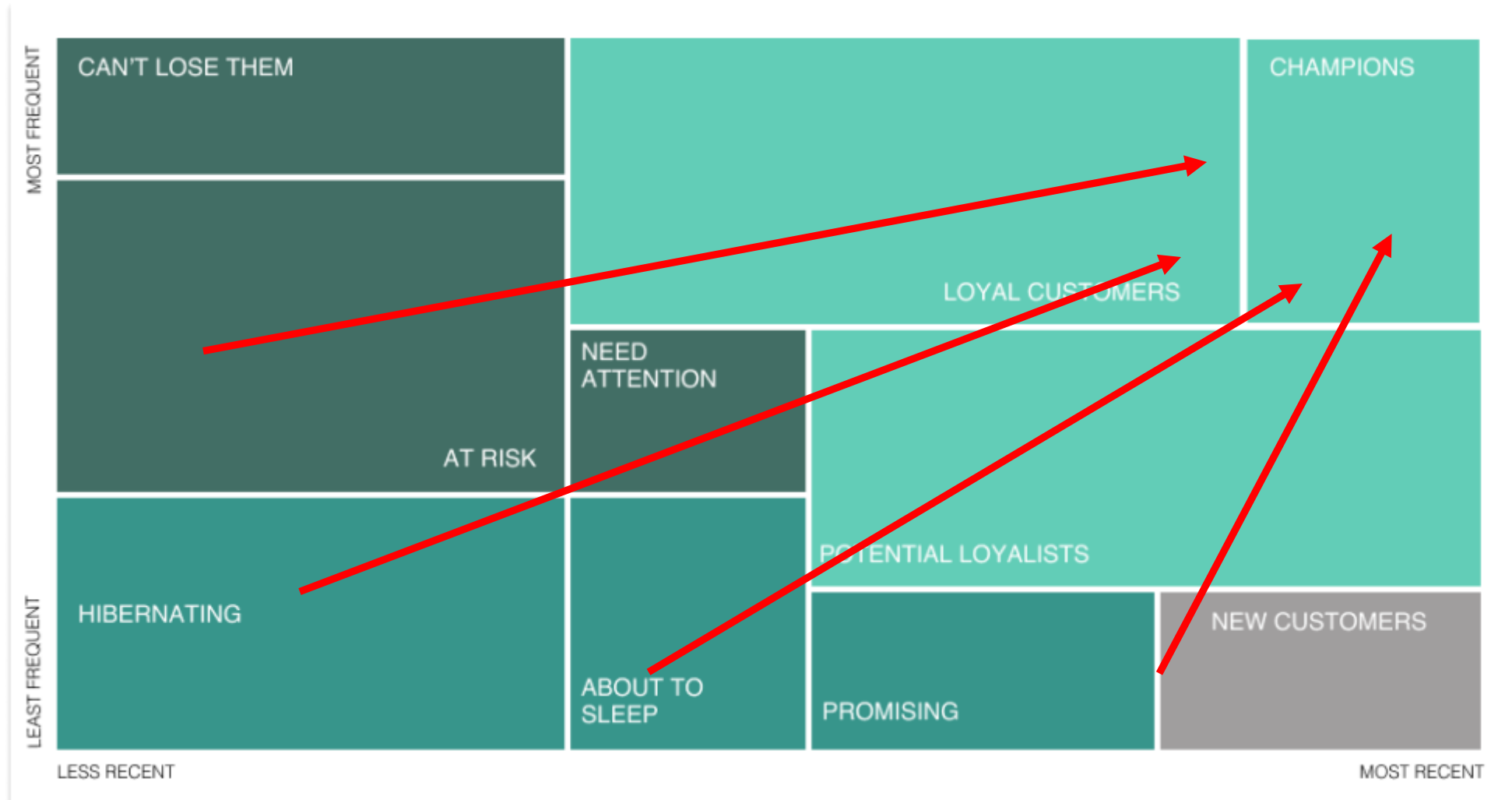
Soovitusindeksi ja käibe seosed

Käive ver SI

XL

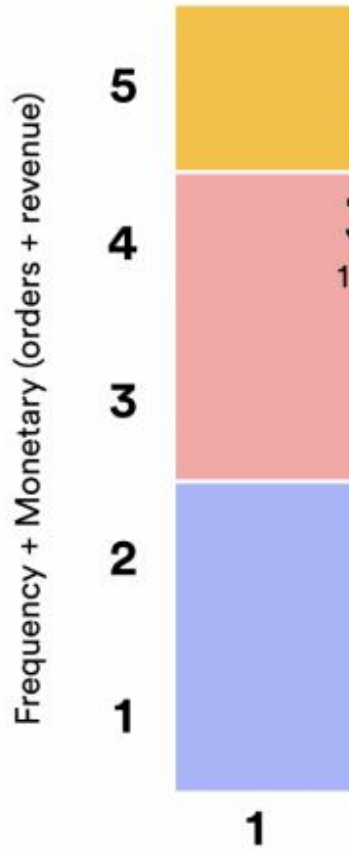


RFM (Recency, Frequency, Monetary) metoodika



RFM Segmen

RFM stands for **Recenc**
number of days since tl
groups on each score to
segments.



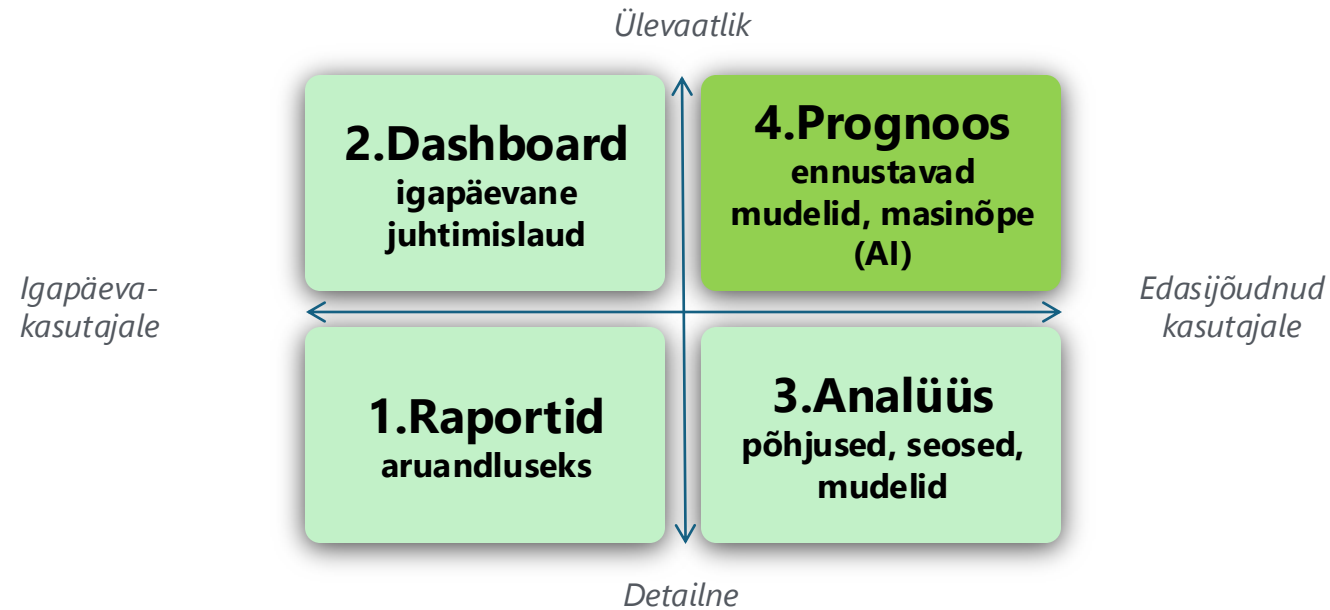
| Customer Segment | Activity | Actionable Tip |
|-----------------------------|---|--|
| Champions | Bought recently, buy often, and spend the most! | Reward them. Can be early adopters for new products. Will promote your brand. |
| Loyal Customers | Spend good money with us often. Responsive to promotions. | Upsell higher-value products. Ask for reviews. Engage them. |
| Potential Loyalist | Recent customers, but spent a good amount and bought more than once. | Offer membership/loyalty program, and recommend other products. |
| Recent Customers | Bought most recently, but not often. | Provide onboarding support, give them early success, and start building relationships. |
| Promising | Recent shoppers, but haven't spent much. | Create brand awareness, and offer free trials |
| Customers Needing Attention | Above average recency, frequency, and monetary values. May not have bought it very recently though. | Make limitedtime offers, and recommend based on past purchases. Reactivate them. |

03

tomers



Mõõtmisüsteemi (ROM) IV tase – andmeringid ehk andmemudelid





Milline on töötajate lahkumise mudel(id)?

- Osakond
- Töötamise aeg (aastates) ettevõttes
- Viimase juhivoolne hindamise skoor
- Töötaja rahuolu hinnang
- Mitme projektiga tegeleb hetkel
- Kolme viimase kuu töömaht
- Tööõnnetuste arv
- Ametikohal tõus (viimase 5 aasta jooksul)
- Palgatase (madal/keskmine/kõrge)
- Mentori olemasolu
- ...

Töötajate_lai_tabel.csv

| palgatase | rahuolu | juhi hinnang | projektide arv | töömaht kuus | töötamise aastaid | tööõnnetus | edutamine | mentor | osakond | lahkunud? |
|-----------|---------|--------------|----------------|--------------|-------------------|------------|-----------|--------|------------|-----------|
| keskmine | 0.1 | 0.86 | 6 | 247 | 4 | 0 | 0 | | sales | jah |
| madal | 1 | 0.41 | 4 | 174 | 3 | 0 | 0 | | technical | ei |
| madal | 1 | 0.74 | 3 | 220 | 4 | 0 | 0 | | technical | ei |
| madal | 1 | 0.92 | 5 | 161 | 3 | 1 | 0 | | support | ei |
| madal | 1 | 0.49 | 3 | 185 | 2 | 0 | 0 | | sales | ei |
| keskmine | 0.1 | 0.55 | 2 | 247 | 4 | 0 | 0 | | sales | jah |
| madal | 1 | 0.65 | 4 | 202 | 4 | 1 | 0 | | hr | ei |
| madal | 1 | 0.94 | 4 | 144 | 3 | 0 | 0 | | support | ei |
| madal | 1 | 0.81 | 5 | 178 | 2 | 0 | 0 | | technical | ei |
| keskmine | 1 | 0.89 | 3 | 194 | 3 | 0 | 0 | | sales | ei |
| madal | 0.1 | 0.9 | 7 | 286 | 4 | 0 | 0 | | sales | jah |
| madal | 1 | 0.66 | 4 | | 3 | 0 | 0 | | technical | ei |
| kõrge | 1 | 0.86 | 4 | 161 | 2 | 0 | 0 | | marketing | ei |
| madal | 1 | 0.59 | 4 | 174 | 3 | 0 | 0 | | hr | ei |
| keskmine | 1 | 0.87 | 4 | 129 | 5 | 0 | 0 | | support | ei |
| madal | 1 | 0.88 | 4 | 191 | 4 | 0 | 0 | | technical | ei |
| madal | 1 | 0.66 | 4 | 238 | 4 | 0 | 0 | | accounting | ei |
| keskmine | 1 | 0.79 | 5 | 152 | 4 | 0 | 0 | | hr | ei |
| madal | 1 | 0.53 | 3 | 142 | 3 | 0 | 0 | | sales | ei |
| madal | 1 | 0.76 | 5 | 201 | 3 | 0 | 0 | jah | management | ei |
| keskmine | 1 | 0.73 | 3 | 205 | 2 | 0 | 0 | | technical | ei |
| madal | 1 | 0.81 | 5 | 243 | 3 | 0 | 0 | | sales | ei |
| madal | 1 | 0.49 | 3 | 106 | | 0 | 0 | | support | ei |
| keskmine | 1 | 0.85 | 3 | 202 | 2 | 0 | 0 | | hr | ei |

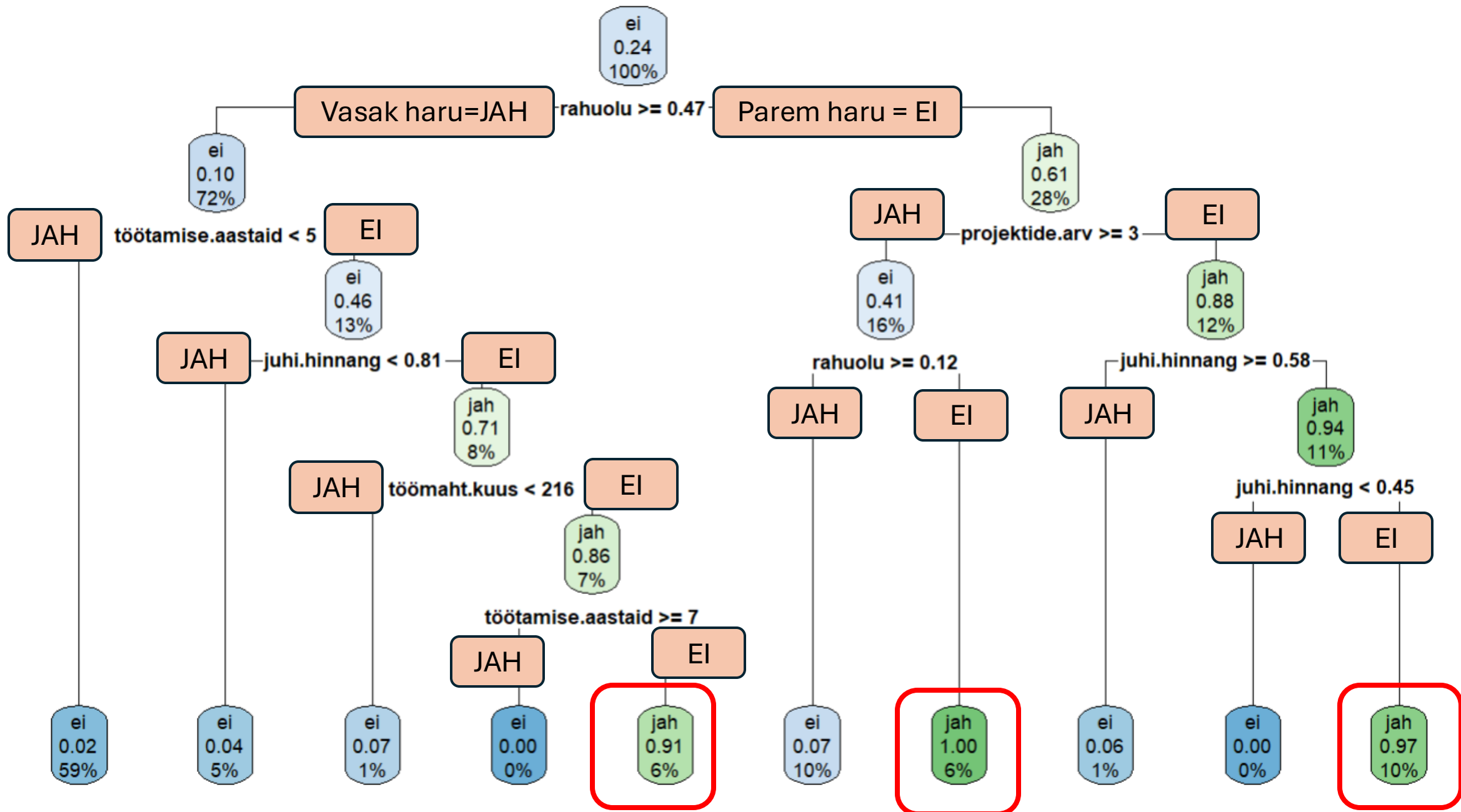
Masina õpetamiseks on vaja kaks rida koodi (R Studio):

1. Loe sisse antud andmestik

```
andmestik = read.csv("töötajate_lai_tabel.csv", 1)
```

2. Tee otsustuspuu (decision tree)

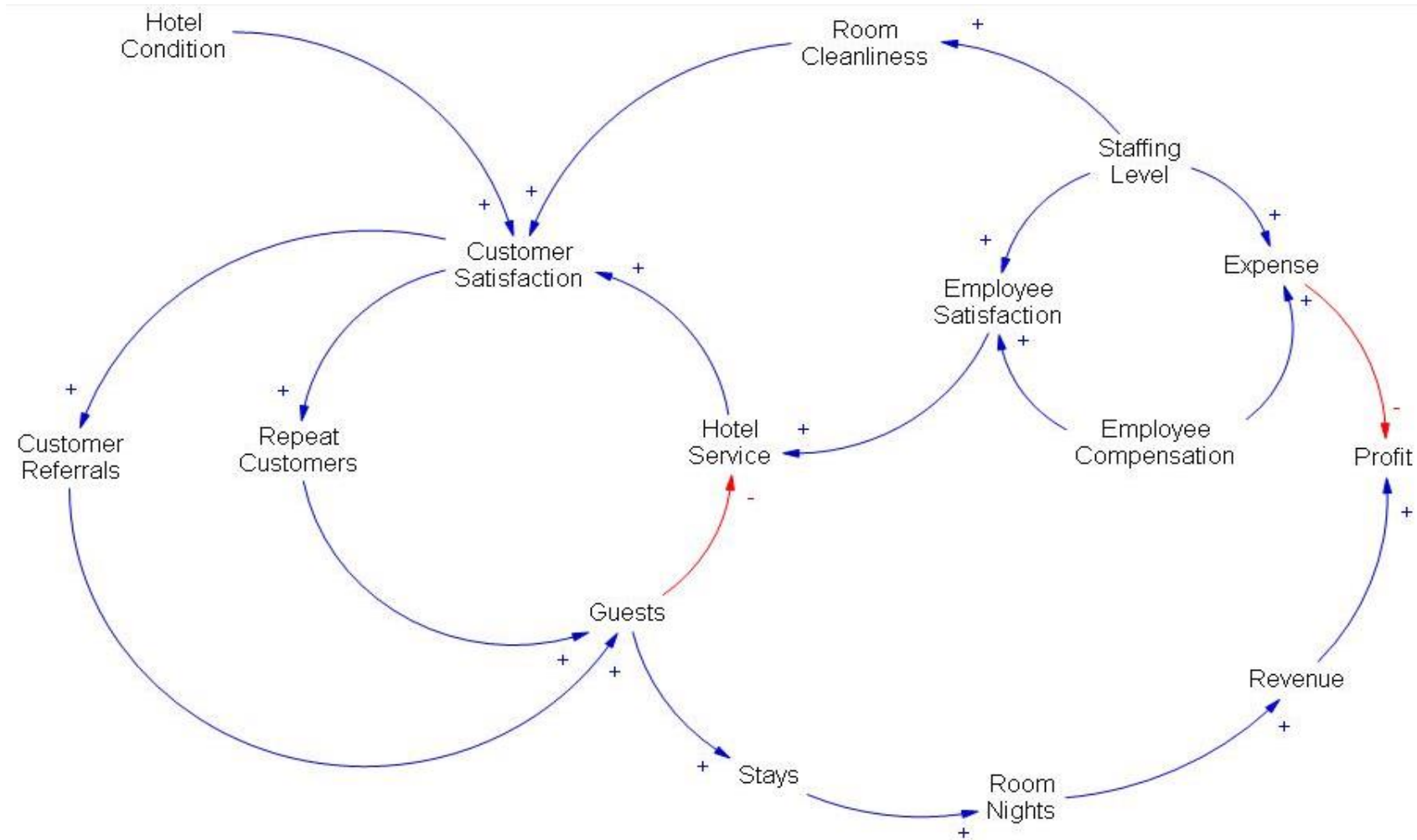
```
otsustuspuu<-rpart(formula=lahkunud ~ . ,data=andmestik)
```



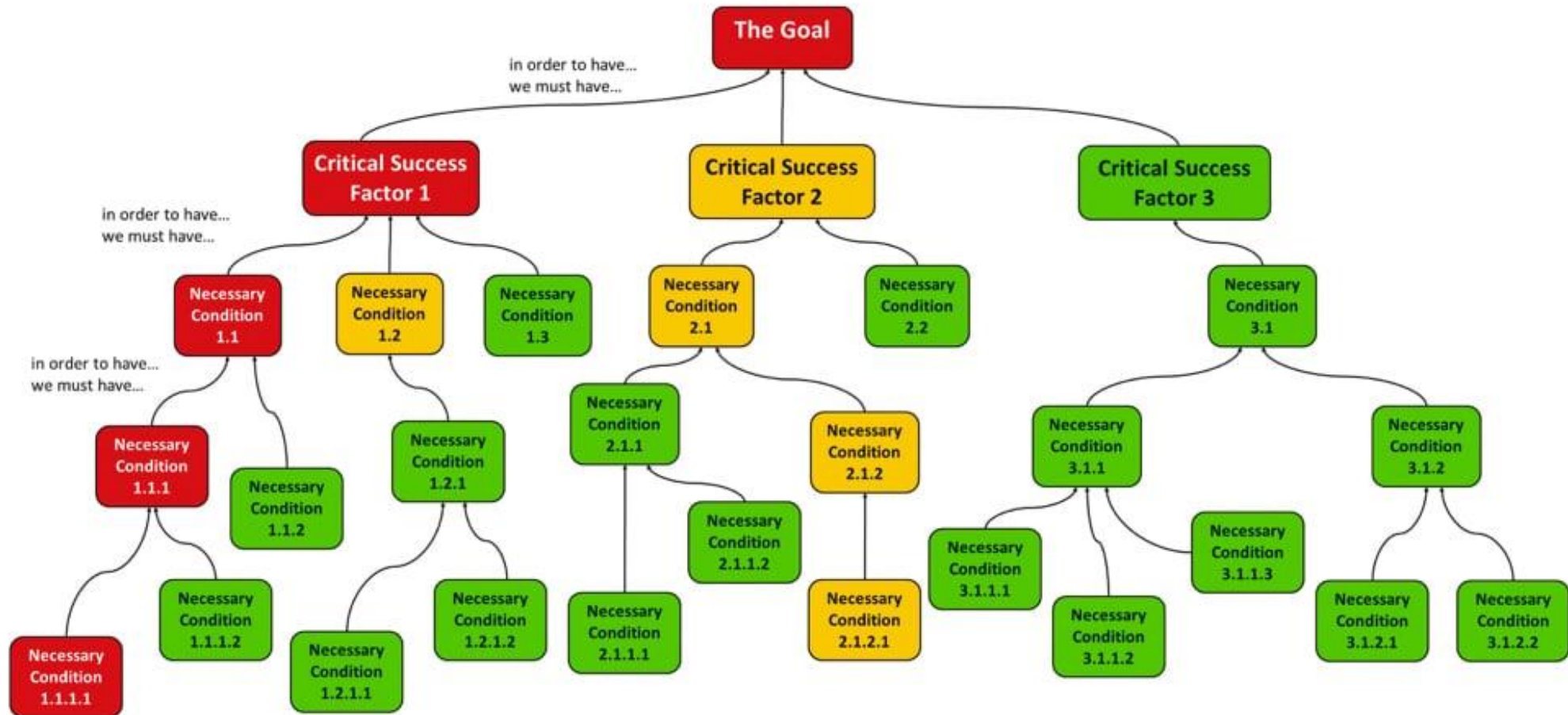
Klientide_lai_tabel.csv

| ID | Senior | Partne | Deper | Tenur | Phone | Multiple L | Internet S | Online Se | Online Ba | Device Pri | Tech Supp | Streaming | Stream | Contract | Paper | Payment Method | Churn |
|------------|--------|--------|-------|-------|-------|-------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|-------|---------------------------|-------|
| 7590-VHVEG | No | Yes | No | 1 | No | No phone se | DSL | No | Yes | No | No | No | No | Month-to-month | Yes | Electronic check | No |
| 5575-GNVDE | No | No | No | 34 | Yes | No | DSL | Yes | No | Yes | No | No | No | One year | No | Mailed check | No |
| 3668-QPYBK | No | No | No | 2 | Yes | No | DSL | Yes | Yes | No | No | No | No | Month-to-month | Yes | Mailed check | Yes |
| 7795-CFOCW | No | No | No | 45 | No | No phone se | DSL | Yes | No | Yes | Yes | No | No | One year | No | Bank transfer (automatic) | No |
| 9237-HQITU | No | No | No | 2 | Yes | No | Fiber optic | No | No | No | No | No | No | Month-to-month | Yes | Electronic check | Yes |
| 9305-CDSKC | No | No | No | 8 | Yes | Yes | Fiber optic | No | No | Yes | No | Yes | Yes | Month-to-month | Yes | Electronic check | Yes |
| 1452-KIOVK | No | No | Yes | 22 | Yes | Yes | Fiber optic | No | Yes | No | No | Yes | No | Month-to-month | Yes | Credit card (automatic) | No |
| 6713-OKOMC | No | No | No | 10 | No | No phone se | DSL | Yes | No | No | No | No | No | Month-to-month | No | Mailed check | No |
| 7892-POOKP | No | Yes | No | 28 | Yes | Yes | Fiber optic | No | No | Yes | Yes | Yes | Yes | Month-to-month | Yes | Electronic check | Yes |
| 6388-TABGU | No | No | Yes | 62 | Yes | No | DSL | Yes | Yes | No | No | No | No | One year | No | Bank transfer (automatic) | No |
| 9763-GRSKD | No | Yes | Yes | 13 | Yes | No | DSL | Yes | No | No | No | No | No | Month-to-month | Yes | Mailed check | No |
| 7469-LKBCI | No | No | No | 16 | Yes | No | No | No internet s | No internet s | No internet s | No internet s | No internet s | No internet s | Two year | No | Credit card (automatic) | No |
| 8091-TTVAX | No | Yes | No | 58 | Yes | Yes | Fiber optic | No | No | Yes | No | Yes | Yes | One year | No | Credit card (automatic) | No |
| 0280-XJGEX | No | No | No | 49 | Yes | Yes | Fiber optic | No | Yes | Yes | No | Yes | Yes | Month-to-month | Yes | Bank transfer (automatic) | Yes |
| 5129-JLPIS | No | No | No | 25 | Yes | No | Fiber optic | Yes | No | Yes | Yes | Yes | Yes | Month-to-month | Yes | Electronic check | No |
| 3655-SNQYZ | No | Yes | Yes | 69 | Yes | Yes | Fiber optic | Yes | Yes | Yes | Yes | Yes | Yes | Two year | No | Credit card (automatic) | No |
| 8191-XWSZG | No | No | No | 52 | Yes | No | No | No internet s | No internet s | No internet s | No internet s | No internet s | No internet s | One year | No | Mailed check | No |
| 9959-WOFKT | No | No | Yes | 71 | Yes | Yes | Fiber optic | Yes | No | Yes | No | Yes | Yes | Two year | No | Bank transfer (automatic) | No |
| 4190-MFLUW | No | Yes | Yes | 10 | Yes | No | DSL | No | No | Yes | Yes | No | No | Month-to-month | No | Credit card (automatic) | Yes |
| 4183-MYFRB | No | No | No | 21 | Yes | No | Fiber optic | No | Yes | Yes | No | No | Yes | Month-to-month | Yes | Electronic check | No |
| 8779-QRDMV | Yes | No | No | 1 | No | No phone se | DSL | No | No | Yes | No | No | Yes | Month-to-month | Yes | Electronic check | Yes |
| 1680-VDCWW | No | Yes | No | 12 | Yes | No | No | No internet s | No internet s | No internet s | No internet s | No internet s | No internet s | One year | No | Bank transfer (automatic) | No |
| 1066-JKSGK | No | No | No | 1 | Yes | No | No | No internet s | No internet s | No internet s | No internet s | No internet s | No internet s | Month-to-month | No | Mailed check | Yes |
| 3638-WEABW | No | Yes | No | 58 | Yes | Yes | DSL | No | Yes | No | Yes | No | No | Two year | Yes | Credit card (automatic) | No |
| 6322-HRPFA | No | Yes | Yes | 49 | Yes | No | DSL | Yes | Yes | No | Yes | No | No | Month-to-month | No | Credit card (automatic) | No |
| 6865-JZNKO | No | No | No | 30 | Yes | No | DSL | Yes | Yes | No | No | No | No | Month-to-month | Yes | Bank transfer (automatic) | No |
| 6467-CHFZW | No | Yes | Yes | 47 | Yes | Yes | Fiber optic | No | Yes | No | No | Yes | Yes | Month-to-month | Yes | Electronic check | Yes |
| 8665-UTDHZ | No | Yes | Yes | 1 | No | No phone se | DSL | No | Yes | No | No | No | No | Month-to-month | No | Electronic check | Yes |
| 5248-YGIJN | No | Yes | No | 72 | Yes | Yes | DSL | Yes | Yes | Yes | Yes | Yes | Yes | Two year | Yes | Credit card (automatic) | No |

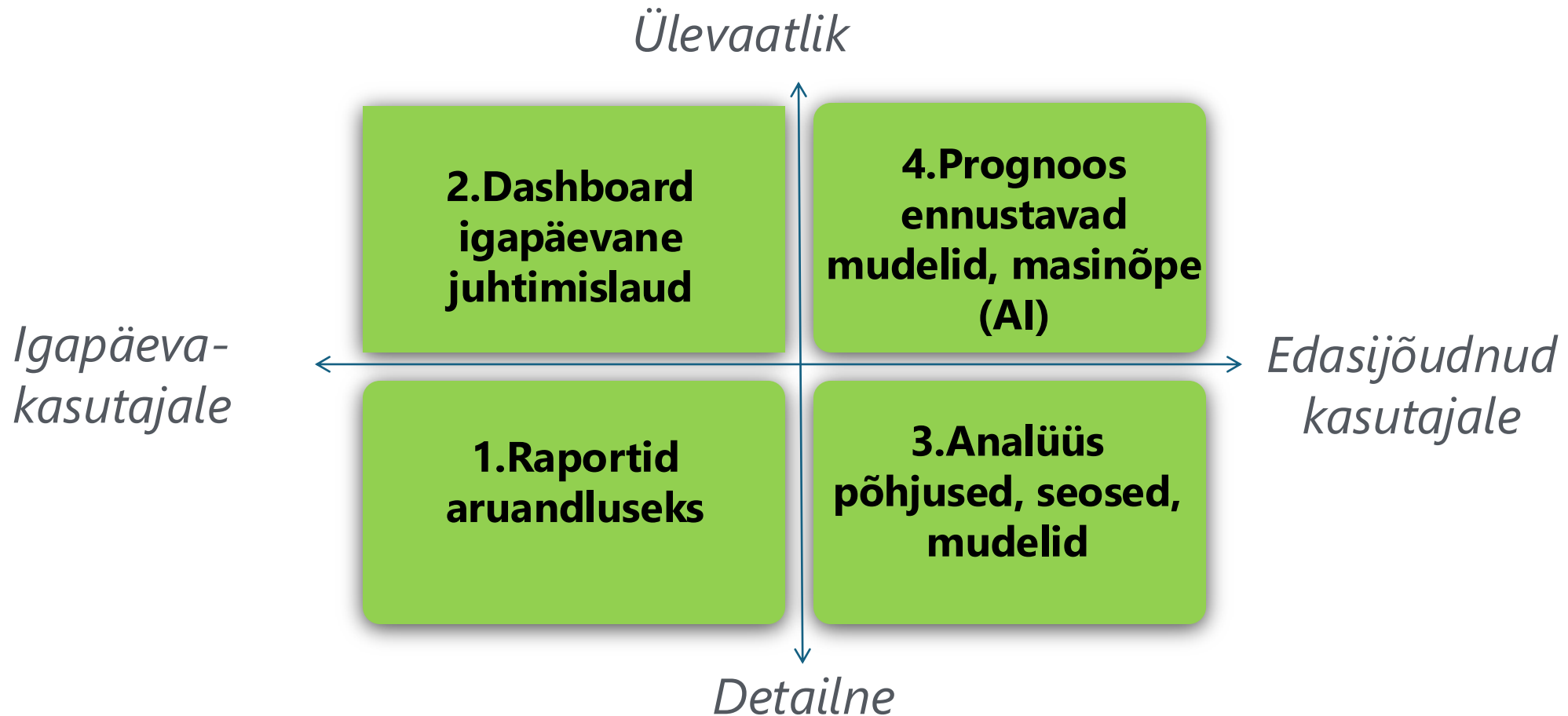
Põhjus-tagajärg seoste mõttekaart



Tegevuste-Tulemuste->Eesmärkide puu



Mõõtmisüsteemi (ROM) tasemed



ROM edukuseks on vaja tegeleda nelja teemaga!

ANDMEHALDUS (DATA GOVERNANCE/MANAGEMENT)

ANDMEANALÜÜTIKA (DATA ANALYTICS)

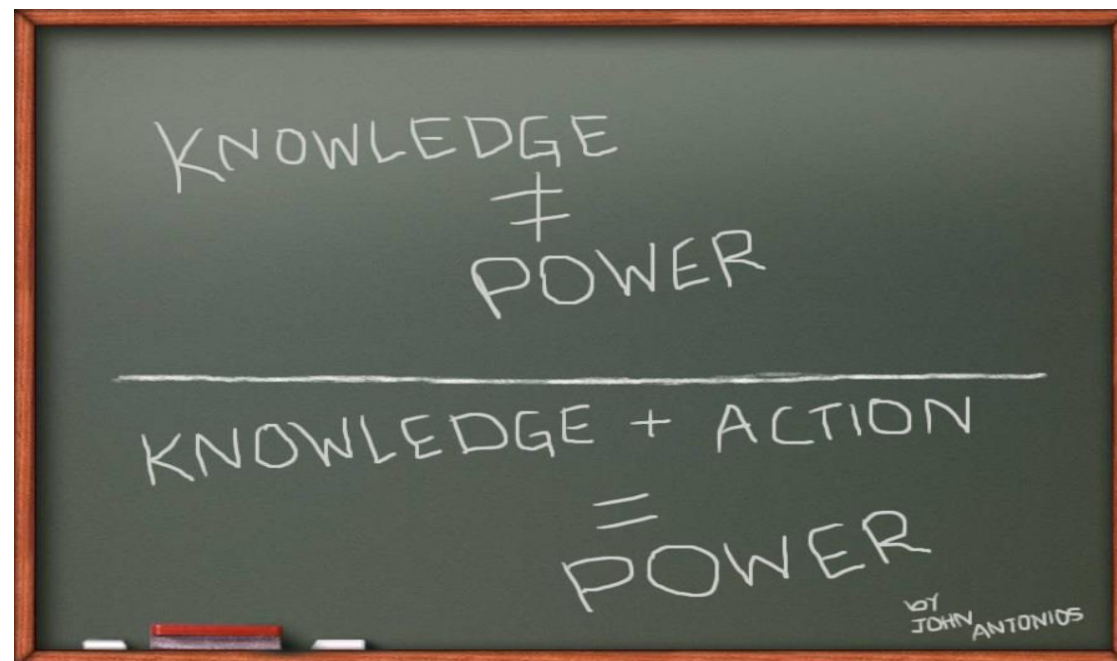
ANDMEKIRJAOSKUS (DATA LITERACY)

ANDMEKULTUUR (DATA CULTURE)

7 sammu, kus Sina saad oma ettevõtte analüütilise võimekuse jaoks panustada!

- Teostage **andmeinventuur** selgitamiseks välja, millised on andmestikud, mis kirjeldavad erinevaid tegevusi klientidega. Vajadusel tehke inventuur ka valitud KPI – kas need vastavad kriitilistele eduteguritele?
- Koolitage kasutajaid **andmekirjaoskuse** valdkonnas
- Piloteerige esimest teeninduse juhtimise **töölauda**, nii et teenindusega seotud personal saab ise oma skoori jälgida
- Esitage teeninduse koosolekul **küsimus** – “Aga mida räägiksid andmed tänase koosoleku teema osas?” Viige läbi ärianalüütika pilootprojekt
- Valige välja teenindusega haakuv teema, kus andmete abil on võimalik teha prognoose või suunata klienditegevusi. Kaaluge **masinõppe** võimalusi
- Kasutage kaasaegseid **ärianalüütika tarkvara** võimalusi
- Ja muutke **andmepõhine probleemide** lahendamine järjepidevaks ja tunnustatud tegevuseks!

Mida **Sina** saad teha, et muuta oma ettevõtte
tööta olevad andmed
oluliseks informatsiooniks,
et saada kasu mõõtmisest ja mõõdikutest?



Filmisooovitused



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